

AVIATION

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The Fleet Air Force—Glenn Martin observation planes on board the battleship Mississippi

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SPECIAL FEATURES

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THE NINTH PARIS AVIATION SALON
AIR SERVICE APPROPRIATIONS DEBATE
ITALY ORGANIZING AIR LINE TO NEAR EAST

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AVIATION

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considering the relative merits of aircraft materials. One given material may be as good as another one, and yet for some particular country one of the two may be more expensive, not for structural reasons but simply for economic or political reasons, although climatic considerations also influence the choice.

In this country, where there are such vast external resources of all sorts of timber applicable to aircraft construction, the relative merits of aircraft materials should naturally be examined. While the welded steel fuselage is probably the supreme of the wood fuselage on account of its greater independence from climatic changes and dampness of construction, it is by no means so certain that, with the excellent timber we have available, steel or light alloys are necessarily a better material for wings than are wood and fabric, nor that an all-wood plane will in every case and every climate of the United States give better all-around service than a ship of composite construction. Generalizations usually lead to hasty and inaccurate statements. This is particularly true in aircraft design and construction.

Dayton Wins

BY THE TIME this is read by our readers Congress will probably have authorized the Air Service to move McCook Field to the new site given by the citizens of Dayton, Ohio. This has opposed the final decision on the moving at this time for reasons that need not be gone again. The local pride that has prompted Dayton to do this to retain the Engineering Division is fully understandable and laudable. The differences of opinion have arisen largely from the national point of view resulting with local pride.

It has been a satisfaction to know that in presenting the case against the moving at this time, Aviatrix has reflected what it believes to be the unanimous opinion of the aeronautical industry, the general feeling in the Air Service ranks, the small group that believed in accepting the only opportunity offered, and the scattered opinion of many who have lived at McCook Field. Now that the matter is settled, there will be no further need for controversy in the part of Aviatrix.

Regarding McCook Field itself, there will probably be less and less need for criticism. In present Commanding Officer, Major Carr, is not only an able administrator but he has had the great advantage of experience with the Engineering Division from without before he took over the command. With the eyes of Congress and everyone interested in aeronautical development turned toward McCook Field, it is very improbable that conditions that have caused complaint heretofore will be repeated.

The commencement of the New Year is bringing the Air Service under the most intensive scrutiny. It will need all the support from its friends that can be rendered. Aviatrix has been a severe critic of some of the activities in the past. It is to be hoped that the pressing necessity for this cause is over and that there may be more harmonious action among all those who are sincerely trying to advance aeronautical progress.

The Ninth Paris Aeronautic Salon

By JOHN JAY IDE

Technical Assistant in Europe National Advisory Committee for Aviation

The ninth Paris Aero Salon was held in The Grand Palais from Dec. 8 to 25, 1931. It was only moderately international as all the exhibited aircraft were French except the Dutch Fokker, Raddekes and Flanders firms and the British Armstrong Whitworth Co., the makers of the Siskiyou monoplane and engines. However, the show was most interesting due to the large number of new types shown during the two years' interval since the last exhibition.

In the tables accompanying this article are given the characteristics of every type of aircraft shown arranged alphabetically according to policy and it is now proposed to summarize the exhibits according to categories.

The Air Liners

Transport Airplanes.—This class was marked by the first appearance of three biplane monoplanes known as types 25, 29 and 31. Type 19 (400 hp Lorraine) which has been under test at Toulouse since last spring was designed for carrying mail, passengers and freight. The mail compartment is placed in the center of the thick tapered mainplane wings, each having a top trim fuel tank. The engine is mounted above the plane and the four radial engines are placed below it in two noisy sections. Type 17 (400 hp Bessart), an externally braced monoplane, has been built primarily for postal work, but capable of carrying four passengers in the extreme rear section. The mail compartment is in the center of the fuselage. The mail compartment is in the extreme rear section. Two Lorraine engines, placed behind the sections. These engines are the old 375 hp models, but so modified as to develop only 320 hp at the speed attained. The large outer accommodation aisle passes through the rear of the aircraft. The construction of the various Lockheed airplanes is a mixture of wood and aluminum, the latter material being used for the fuselage.

Type 25, 29 and 31, owing to the general practice of the designer, is made of wood except for the front part of the fuselage with its engine bed and pilot's seat. This fuselage section is detachable from the main portion of the fuselage and the engine bed is separately removable, presenting ready replacement of the power plant. The engine, which will be fitted or installed in the 25 is 400 hp Lorraine, but the motor used is also a 400 hp Lorraine. The leading gear consists of dual-wheel shock absorber struts incorporated in the forward struts; a steel and sprung shock absorber arrangement of the 1927 R.E.P. monoplane. The baggage is loaded apparently only at the center of gravity and behind it at a rate of 100 kg per meter. All landing gear is non-retractile and the stabilizer is adjustable in flight. The fuel tanks in the wings can be rapidly supplied by a rap panel.

Only Two Light Planes

The well known "Jabiru" transport plane exhibited by Farman had two 360 hp Lorraine engines. A similar machine with two 360 hp Hispano-Suiza was the grand prize winner of the Paris show.

The Morane Co. showed their very fast type 38 biplane. The value for two passengers could be replaced by a cockpit for training or photographic surveying. Also the 130 hp Bessart could be quickly exchanged for a 180 hp Hispano-Suiza if desired.

The Farman Co. showed a classic Farman monoplane in the Paris-Peigeon air line. This was also shown the biplane at a Comiso 300 km engine biplane.

Lodsi Airplane.—The Lodsi contained two light planes—a Deperdussin 1 and a Pander type 30. The former is an enlarged offshoot of the monoplane shown at America by Bertrand and is equipped with a six cylinder in line 320 hp Gnome engine. The Pander is a very pleasing little monoplane made

at The Hague and equipped with a 25 hp Avcoel engine. **Tourney and Touzot Airplane.**—The training and/or touring machines included the Touzot 60 small monoplane with wire bracing, the Cradock 65, 127 and 186 (the last two formerly known as types 27 and 48), the Touzot 19 and 34 (the latter a new parasol monoplane having a plan of 12.5 m. span and a 100 hp Hispano-Suiza), the Touzot 16 (in the earlier version) and the Marceau-Breguet 50 (500 hp Bessart), 45 (500 hp Hispano-Suiza) and 50 (120 hp Bessart). The last named is a closely designed parasol monoplane with a quickly interchangeable power plant and landing gear. When this machine goes the 200 hp Hispano-Suiza will be used in type 41. Touzot also shows the Poco VIII 1900 and S.R.C.M. XXII, which have remained unchanged since 1922.

Farman Airplanes.—The safety racing machine exhibited was the beautifully streamlined Bernard 05.1 M.B.1 monoplane (450 hp W type Hispano-Suiza) derived from the Bertrand parasol monoplane exhibited in 1922, but made of wood instead of metal.

Some Missing Pursuit Ships

Pursuit Airplanes.—In this category Bleriot 12 (he has not exhibited since 1922 and was affected a great deal under the factory) showed the standard parasol monoplane. Spad 81 (2800 hp Hispano-Suiza) and 82 (2800 hp Hispano-Suiza), all reports to the ordinary notwithstanding. The Spad 81 is remarkable both in its climb and maneuverability, due to its low engine and concentrated weight. It has officially reached 10,400 ft. altitude in 12 seconds. The 82 has a more powerful engine and is faster. The new all-metal Dewoitine 10 (400 hp Hispano-Suiza) and 101 (400 hp Hispano-Suiza), both types being still under test. However, the well known 11 (200 hp Hispano-Suiza), was displayed not only on the Dewoitine stand but also by S.C.M. (which holds the French production rights) and by the M.A.N. (Germany) and the M.A.N. (U.S.A.). The 11 is being produced in quantity not only for the French Army and Navy but also for Roumania, Czechoslovakia and in Italy.

Other pursuit airplanes included the Potez 23XL, derived from the 23XL but with a Hispano "line" instead of a 280 hp Hispano-Suiza, and the Hanriot 20 (250 hp Bessart) which is a very sturdy monoplane. The Hispano-Suiza engine for the 23XL was not available. The pilot's seat is adjustable for height and is protected from below by a steel armor plate.

New Fighting Planes

The Hanriot Co. showed the type 29 staff produced at the end of 1919, and Poens the new type 26 with undercarriage engine mounted for the 360 hp V type Hispano-Suiza or 450 hp Hispano-Suiza. The engine, which is mounted in the center of the fuselage, is an interesting feature due to the short engine. The leading gear is an interesting design with a single strut on the center and a long great cross strut connected to the wheels. The short engine, consisting of radial disks in compression, are inside the forward tubes of the V struts. The Potez 25, like all the pursuit machines of the new French program, has four machine guns—but Vickers being forced through the propeller and two Bredas. The upper plane has a 100% of the power of the lower plane. A Siskiyou monoplane (360 hp Hispano "Pugnac") was shown with the wing and fuselage covering removed, exposing the metal shell and wood construction. The latter machine was one of an order for Roumania.

Fighting Airplanes.—The Sopwith Co. exhibited a biplane



Showing exhibits at the Paris Aero Salon.—1. Potez 26 parasol plane; 2. Lioré et Olivier two-place observation plane; 3. Schleicher Kauderwelsch aircraft; 4. Lioré et Olivier 13 and 16 air racers; to the right, Deperdussin D1 parasol plane.

engine fighter—the 402 which is practically identical with the new 42 single seater parasol monoplane except for the addition of a very small lower plane. The power plant is a 450 hp Hispano-Suiza mounted in a dashboard hood which is extended backward to include the pilot's seat. The metal parts are mounted in a previous fuselage which means that of the type 29, a series of ten have greatly facilitated the production of the form. The tanks placed in the wings are arranged in step.

A Biplane Escort Plane

The Schleicher 10 multiplace fighter monoplane has the distinction of being the only entirely metal machine (including wing covering) at the Salons. The material used was the Schleicher steel "Gitterfusel". The design was unusual, there being two fuselages, each accommodating in the nose a 400 hp Lorraine engine. The crew was carried in a central nacelle at top of the plane.

Military and Day Hunting Airplanes.—The Bleriot exhibited a complete type 19 similar to that of Potez's Paris-Shanghai flight and a skeleton fuselage of the Italian type 18 with the 360 hp Bessart. The very complete equipment is remarkably well fitted into the fuselage, which is produced in a single piece. As used in French military airplanes, a S.E.M.A.S. tank truck tank is fitted and the fuselage or Hermann-Audier fuselages covers the surfaces.

Caudron showed the very fast observation biplane (450 hp Hispano-Suiza) which followed the Caudron 10. Caudron prestige. Poens exhibited a type 19 with a 500 hp Hispano-Suiza. It is also remarkable for the great length of the lower forward of the pilot's seat. The span of the lower plane of this airplane just equals the breadth of the landing gear.

Koolhoven, the Dutch designer, produced a much improved

version of the PK31 shown in 1922. The new machine, equipped with a large set of wings, is intended for observation. With smaller wings it becomes a moderate fighter. The engine is a French made "Jupiter." The Potez 25 is a new observation biplane very similar to the 26 parasol plane shown above.

Saint Exupéry showed two airplanes both having the 300 hp Hispano-Suiza engine. The 21 is an armored edition of the well known "Avion-mousquetaire," while the 24 is a normal simple but equipped with a second small engine used for starting and supplying lighting and radio.

The Lioré et Olivier 12 (two 400 hp Hispano-Suiza) and the new S.E.C.M.12 (550 hp Bessart). The latter is entirely of dashboard and the skeleton of the upper wing weighs only 560 lb. The center section of a Farman 20M with four 360 hp Hispano engines was also exhibited. This machine is a modern edition of the unenclosed Farman shown in 1922 and retains some of its features.

A Novel Marine Airplane

Seaplanes.—**Anspach and Witten Airplanes.**—Louis Anspach and his wife F.D.A. 500 km. maximum with the 1200 hp 12 cylinder Hispano-Suiza engine placed in front and driving a tractor screw. The 10 is an enlargement of the 17 (driven by the Ministry of Marine) and has a plywood engine nacelle, wing floats and top fairing of the hull.

A.C.M. exhibited a 200 horsepower biplane having two 12 cylinder Hispano-Suiza engines, each driving a tractor screw. On the Nieuport 20 a Bessart 300 hp Bessart flying boat with a similar power plant but arranged laterally between the wings and with special attention paid to ease of deployment.

On the stand of the Admiraal Air Line was the hull of

Patriot is an excellent soldier, has put his whole heart in aviation. I had the honor of serving under him when I was in the Army, and I can say that he displayed in the testimony given by him, five days ago, such judgment, such tact, and with the "Army viewpoint," is remarkable, and well, I am sure, inspired and encouraged other officers to come out and speak for the best interests of their country, not only than for the best interest of these hours of the service.

With great gravity and the consideration which chart we should be compelled to decide this great problem. Therefore I urge that we make no hasty, unnecessary expenditures at this time. The experienced officers of the Army now at McCook Field, we have said before, have been going on for years. It was recommended that we go to the Secretary of War, Gen. Frank T. Lusk, This matter was before the House before.

"My colleagues will remember that a similar proposition was before us the second session of the Sixty-fourth Congress. At that time we had three or four propositions very similar to this. One proposition for McCook Field, one for the field at Dayton, another for the purchase of the Curtiss-Kennedy plant at Dayton, and another for the purchase of a field at Dayton, Ohio.

"Cordially, with the same earnestness that I pleaded, in 1919 I now plead to you, justified and backed up to you with the history of the Dayton plant and what happened at Dayton, and with the record of the money at this time, which makes not only an appropriate \$200,000,000, but almost an expenditure of nearly \$100,000,000.

An Inappropriate Expenditure

"I am urging a study of the question on its merits. I say it is very inappropriate at this time to make the expenditure, because we have no definite plan, and we have no Air Service. We have the McCook Field plant there now. It can continue for another year, and after we examine the whole question it will be up to us to decide whether we need this new plant at Dayton or not and what should be done in establishing a permanent engineering plant and an experiment of stations."

"I have the figures showing what has been accomplished at both plants. I say they have accomplished about as much with each plant and have spent about an equal amount at each plant with experiments that were not justified by past experience and by the developing knowledge of the day. The time when I went to the government from Ohio, I was informed the interests of aviation, we had Congress to pass an appropriating money for buildings that we say not need; I want to stop some of those needless expenditures, and I urge a study of this question in a comprehensive way. Then I am in favor of closing out, justly and judiciously, soon enough, the rest of the money appropriated."

Mr. Reid: Gains New Coat Figures

"This," says the red Congressman Frank E. Reid, (Rep.) of Illinois, "is the real 'bottom' result" of which we have heard so much. In the past the charges have been of graft and scandalous dealing, and the only result is that we have a two-year period ending June 30, 1925. We do not know if it is a two-year period, or from July 1, 1924, to date, our aviation expenditures have actually been greater than during the two. I do not intimate that, but I do intend to try to find out how this money has been spent, where it has gone, and what we have done with it. We have lost a state of complete control over it, which has lost us in a state of complete control. Certainly it is not ours in the nervous thermostat. To ascertain what is the trouble and then recommend means for correction is the aim of the inquiry, as I interpret it. The figures are silent, having been prepared by the Army Air Service, and I would believe the results of my request. They wouldn't tell us why the amount was so far underappropriated for our services, but also since obtained from other sources, I have found that the surface and probable would not have been made public for some time had they not been dug out in this Committee."

"Way-Down Illinois M. Patriot, Chief of Air Services, was the principal witness. In response to 40 questions from Mr. Reid, General Patrick stated his conviction that the next war would be decided in the air, that it was the policy of the

War Department to maintain only a frugal work of aviation which could, in time of necessity, be expanded from smaller station and a small aircraft industry, that existence of a real aircraft industry was important, and that the War Department should not be compelled to go into the business of developing the development of the industry and of commercial flying.

Mr. Reid then read into the proceedings the statement at past war aviation expenditures, showing that, in the five years 1920-24, inclusive, the total for the War Department was \$20,000,000, the total for the Army Department \$17,624,339, and total for the Navy Department \$16,867,200, or \$52,491,539, to be paid to the National Advisory Committee for Aeronautics, \$10,000,000. These sums include money obtained by the War Department from the sale of surplus aircraft, pay of personnel, etc., but all constituting a direct charge on the government for aeronautics.

Appropriations vs. Expenditures

"For five years—practically since the Aviation Committee has been organized for failure to appropriate enough money for aviation," said Mr. Reid. "The desire of the leaders of the Army and the Navy and the congressional committee in the appropriation of funds for aircraft types are shown in the door of Congress, and we, ourselves, have almost been forced to believe it is true. The War and Navy Departments each year have come to Congress and have asked for appropriations largely on the plea that, notwithstanding aviation and a small aircraft industry are vital to our defense. But, here we are, and we have the figures of the Army Air Service, which is a fragment of an aircraft industry, yet confronted with the necessity that air transport in time of peace and air power in time of war, are the great potential factors in our life in the near future."

"Now we are taking a national aviation inventory. I am going to the War Department to find out what is the situation, the inquiry into the expenditure of these hundred and thirty-three millions. It would seem that a commercial aviation is basic and imperative we ought to spend more on it and less, proportionately, on military establishents. Furthermore, when many agencies are spending money for aircraft, we have to compete and we have to compete in the market place. It is like pouring water into a hole bottom being open, is appropriate money for aviation without bottom being first determined and created a national air policy."

Following up his inquiry, that in the five fiscal years, 1920-24, inclusive, the United States has spent on aviation a total of \$52,491,539, the Congressman on Jan. 7, 1925, announced an "order" of the Air Service which would add additional millions—the \$100,000,000 item in the pending Appropriation bill for the establishment of an enlarged Air Service experimental engineering plant at Dayton, Ohio.

In the same session, Congressman Reid, who is a member of the House committee on investigating aircraft, introduced at the close of the Clerk's of both houses, the House of Representatives, an amendment to the Army appropriation bill which would legally require both services to purchase aircraft, engines and instruments in the open market, with advertisement and without competitive bidding, which, according to Mr. Reid, "will reduce the essential aircraft industry to a condition of appearing bankruptcy, and has thus, through destruction of sources of supply, placed the air defense of the United States in grave peril."

The attack on the McCook Field engineers, and the proposed change in methods of procurement,西北了 the 2nd House bill, and the amendment which many are being held as an effort to realize a military policy of non-intervention, which exists today. It would, also, the opening of aviation effort on the part of the increasing number of Congressmen who feel that the way to save money and to get results, both in air power and in the encouragement of private enterprise, is to coordinate the source of revenue and credit for which Congress now provides money at the rate of \$100,000,000 a year.

Quoting testimony given by Maj. General Massie M. Patrick, Chief of Air Services, Mr. Reid placed the check out of the Army aviation experimental station in the last five years at \$20,000,000. "Due to the fact that these engineers, who are

distinguished largely for their success in working with civilian airmen, and for their failure to produce anything themselves, the result is a large extent the loss of experienced men, which constitutes the bulk of business given out by the Army Air Service. I believe it is safe to say that possible \$6 per cent of the nearly \$200,000,000, which has been given the Army by Congress in the last five years, has been to a great extent lost."

Mr. Reid stated that General Patrick was "unable to tell the aircraft investigating committee a single statistic that the engineering division had produced, either aircraft or engines, in the last ten years."

While both the Army and Navy are across offices some each year to Congress for money, advancing no argument the necessity to support and develop aircraft industry, the result has been made to fit in.

Mr. Reid asserted, "that he has no objection to advertising large engineering and manufacturing plants. On Dec. 1, 1924, on the four 'Competent stations,' two Army and two Navy, at which design and manufacture of regular are carried on, there were employed a total of 3,000 civilians, of which 1,500 were at Dayton, Ohio, the site of Mr. Wright and McCook Field. On the other hand, in the Army Air Service, in the entire United States not even three thousand persons were employed. Yet it has been from the aircraft industry, stirred as it is, that has come every surplus and every surplus engine with which our many world aeronautics have been built, which make possible flights to that around the world were won."

The proposed to enlarge the Army engineering division, Mr. Reid said, had its genesis largely in Dayton and in "the conditions of Army responses to be aircraft designers and manufacturers." He called for a lot of subcommittee to the \$100,000,000 fund which the people of Dayton raised for the purpose of having a new station, and which has been offered to the Government. "We are not asking for a new plant," said Mr. Reid. "It will be interesting to learn whether, among these subcommittees, we find the names of persons, corporations or experts, which made money out of aircraft, in Dayton during this war, who expect to profit by it in the future. We are not asking for a new plant, but for a real, real, real plant. Mr. Reid quoted a Dayton engineer who had written an article denouncing that fact that the \$400,000 the people of Dayton invested, the big Army project would bring \$100,000,000 in new construction and assure an annual payroll for 20,000 to 25,000 Dayton people up to \$50,000,000 a year."

"It is not sort of thing that I had in mind, and I hope to present this point to you in the development of this question. I am opposed to this project for reasons of economy and public policy. I don't believe we should go as quickly upon million for military aviation, with little to start for it, when what we ought to be concerned with is aviation as a business, a business we prefer them to work, in other words, developing commercial aviation, which is the real basis of our power."

U. S. A. Sixth Rate Air Power?

"I am surprised," said Mr. Reid, "that no member of Congress, who is in favor of a unified air service, of national security, and who is in favor of a strong national defense, will vote for the McCook Field appropriation, opening the door, as it does, to increase in aircraft technology at Government plants without getting results."

Mr. Reid's amendment authorizing the departments to purchase aircraft by competitive bidding specifically limited the purchase to "commercial aircraft manufacturing corporations" in this country, in which none of the firms in the industry are definitely held, owned or controlled by foreign. The exception followed exposure in the House aircraft query that the Army Air Service had given a \$100,000,000 contract to the aircraft builder A. H. G. Fletcher, that machine has not turned up business in this country.

The experts want \$12,000,000 for the meeting. The \$100,000,000 is in keeping with the situation. Mr. Reid, however, argued that which presented his Assembly, Wickens, Johnson, Reid, LaFever and Fitzgerald took part the appropriation was passed as authorized.

"Instead of adopting, immediately after the amendment, a continuing plan of procurement, both army and navy services have, notwithstanding the fact that they have been whereby when it suits their convenience, that is to say or purchasing aircraft, through mid-thrust competitive bidding, or they can bid excess under the law, which permits buying proprietary designs, patented articles without competition, they have issued orders as though."

In the testimony of both General Patrick and Admiral Moffett, statements were made that it was the desire of the department to get away from competitive bidding, and that the assistance of the committee was requested to this end to amend the law and amend, that the rule of competitive bidding was not always followed.

It is now desired that it is the desire of the departments to stick to the present law, and to amend the law so as to serve the public welfare. To do so, Under existing legislation, (U. S. Comp. Stat. 1916, §6600, U. S. §2723) Purchase without Advertisements, the Navy Department is authorized to purchase in the open market without advertisements or specifications, such items as essential to the national security, such as aircraft, ships, aircraft and ordnance."

"What I propose to do is to give aircraft, which constitutes today the dominant arm, the same consideration as is afforded land guns that are obsolete and clumsy, bitter and useless."

Mr. Fitzgerald's Speech

After Mr. Reid had concluded his remarks Mr. Fitzgerald from Ohio defended the existing project. He said in part:

"The Wrights invented an engine on their very field which the people of Dayton have been instrumental in getting into the Government. We are not asking for a new plant," said Mr. Reid. "We are able to learn who is in charge of that project. It will be interesting to learn whether, among these subcommittees, we find the names of persons, corporations or experts, which made money out of aircraft, in Dayton during this war, who expect to profit by it in the future. We are not asking for a new plant, but for a real, real, real plant. Mr. Reid quoted a Dayton engineer who had written an article denouncing that fact that the \$400,000 the people of Dayton invested, the big Army project would bring \$100,000,000 in new construction and assure an annual payroll for 20,000 to 25,000 Dayton people up to \$50,000,000 a year."

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"As far as the attack on the Dayton people, they are as human as anyone else. The Wright brothers lived and worked there. The Dayton people were no more different than the people of the rest of America. They looked upon the Wright brothers as heroes. They were not afraid to stand up for them, as well as all the American people should be ashamed of it."

"Now as to the attack on McCook Field. Five hours have been lost in getting off from the field. It is dangerously small. The Dayton people were interested, naturally, in retaining it. It is advantageous in a commercial way. It was not established at Dayton as a matter of sentiment but because of the real basis of our power."

"The new field has 5000 acres of ground. The great new field, the largest in the world is sufficient for all purposes. A great sheet of water should be supplied to respond from the Mad River if they wanted to use that much water. I believe that would be sensible in case that water became scarce. They have a great deal of water available. The Army and Navy. The Navy is independent, and there is a certain amount of insulation and competition. However they exchange knowledge."

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New Mexican Airplanes

The National Aircraft Factory of Mexico recently produced to the designs of its chief engineer, Mr. D. Angel Latorre, a few several new types of military airplanes which have been successfully tested at Villahermosa airfield, the chief airbase located in the Mexican state of Tabasco.

These shapes all follow the same principles of construction, although in detail they differ considerably from each other. They are stout framed monoplanes of class Ia, and while there is nothing revolutionary in their design, they are noteworthy for having been entirely built of Mexican materials, save the engine and propeller. In the case of the designs, the shapes are entirely constructed of wood, excepting the covering of the fuselage and the wings, for which plywood is used.

The most remarkable of these shapes is the "Quinceañero," observation day bomber fitted with a 400 hp. Liberty engine, for which a top speed of 170 m.p.h., a landing speed of 58 m.p.h. and a range of 1,000 miles at 100 m.p.h. was claimed by our Mexican source. Fifth. It is a biplane which has a maximum load when fully loaded, but even so it is remarkable considering that Villahermosa, where the ship was tested, lies 4,000 ft. above sea-level. The ship has a wing area of 367 sq. ft. and weighs empty 2,600 lbs. The useful load being 2,700 lbs. in which the fuel supply is included, the gross weight would be 5,300 lbs.

A different model of this observation-day biplane, which has 16 ft. 21 in. long-wing area and is equipped with a 155-hp. B-16-9, engine with supercharger, has a high speed of 120 m.p.h., a landing speed of 47 m.p.h. and a ceiling of 23,450 ft. This aircraft is given an 8,200 ft. to 4 miles from a level of 6,000 ft. The maximum weight of the ship is 2,900 lbs. and the useful load 1,000 lbs. The empty weight is 2,000 lbs.

Besides these two experimental service ships the National Aircraft Factory of Mexico has produced the "Mexico," a pursuit biplane monoplane, which has 289 sq. ft. wing area and is equipped with an 80-hp. Le Rhone engine. The weight empty is 1,200 lbs. The weight loaded 1,800 lbs. the high speed 75 m.p.h., and the ceiling 30,000 ft. Fuel for 1 hr. is carried on board.

A pursuit plane fitted with 350-hp. Gnome engine has also been produced. This ship is said to have a high speed of 160 m.p.h. and a landing speed of 46 m.p.h. The climb is given as 2,000 ft. in 2 sec. The armament consists of two 7.92-mm. machine guns. Fuel for 1 hr. is carried on board. The weight empty is 1,620 lbs. and the weight loaded 2,300 lbs.

\$100,000,000 Air Loan Fund

Full cognizance of the impossibility of enacting legislation at the present time preventing the creation of an air loan fund, and that something should be done immediately to encourage commercial aviation and to further the extension of existing continental air lines, Congressman Clarence J. McLeod, of Michigan, recently introduced a bill in the House of Representatives directing the using of funds at a total cost to exceed \$100,000,000 to be used as basis to negotiate and establish an airway system designed to enter the transoceanic flying field.

Mr. McLeod is of the opinion that his bill is not as logical as it should be to place the United States on a basis with other nations in this field, but he believes that it is true that a system of passenger and freight air lines, particularly international airways, as in the United States, is something new and it has to be sold to Congress and to the Nation.

Mr. McLeod believes that the passage of his bill will cause persons interested in commercial flying to enter into this new field, with encouragement and as the basis of loans. He believes that the creation of an air loan fund will stimulate the English lines and that these lines after a short period of time, will go into a subcontracting as well as a paying basis.

When commercial aviation is properly "sold," when Congress and the nation are convinced that passenger and freight air lines are necessary and that they can be conducted at a profit to investors, than as interested House and Senate leaders by an enlightened people, will enact bills which will



Sir Christopher Thawson, future Air Minister for Great Britain, who is in this country on a lecture tour

greatly encourage large ventures into this field, and it is hoped that in this connection Congress will see fit at some future date to pass a bill authorizing commercial flying in the United States.

Mr. McLeod's bill will not only an incentive wedge to bring about the necessary stimulus for the proper encouragement and development of commercial aviation.

British Air Mission in Roumania

A British aviation mission, under Vice-Admiral Brasier, recently arrived in Bucharest. The Vice-Admiral, who is an authority on the Royal Air Force in Roumania, is said to be continuing an inspection tour through Great Britain and India, and Brasier is expected to be an intermediate point on the main route.

The Vice-Admiral is scheduled to have conferences with the leading military authorities of the country, including Count Principe Carol, and is reported to have advised the Roumanian government with the construction possibilities of the country's air service. It is significant that the Vice-Admiral is accompanied by representatives of the British airplane factories which have recently been negotiating with the Roumanian government in regard to airplane contracts, notably the Armstrong, Whitworth and the Vickers companies.

A Strange Message

"There is an airplane broken down up in the air near my house and if I don't start it will be the usual message received by a Boston newspaper over recently from a lady of that city."

The reporter referred to this odd incident discovered that a plane, which afterwards proved to be a 70 type civilian plane from the Naval Reserve Air Station at Squantum near Boston, was breaking a strong wind of some 50 m.p.h. velocity, and because of the form of the wind seemed to remain stationary in the air. The plane was over a church steeple, which appeared to be acting a supportive part on the plane, holding it suspended in the air above it.

AIRPORTS AND AIRWAYS

Philadelphia News

Philadelphia stepped definitely into the field of commercial aviation in December with the purchase of a forty-seat flying field on Germantown Boulevard by Harold F. Petersen, director of Petersen Airlines, and member of the Aero Club of Philadelphia. The new field, which occupies approximately four acres, will be utilized on the terminal for transportation of passengers and transportation services on a very large scale.

With eight planes in production for instant service, Mr. Petersen announces that Petersen Airlines proposes to make flights for leisure, pleasure and emergency purposes from the Broadmoor Field, which is available gratis to the public. Weekday flights will be made to Atlantic City in forty minutes, and long-distance runs will be made upon application to points as far south as Miami City and far north to Canada. The new field will be opened in connection with the field recently established by Petersen Airlines at Bryn Athyn, Pa.

Mr. Petersen's statement announces purchase of the field follows:

"For the first time in the city's history, Philadelphia will have at its disposal an emergency air service which will offer infinite possibilities for the saving of time and money. Petersen Airlines, an important airline now making its debut, offers the service of one Petersen flight a day to the farther sections of the country, making it unnecessary to employ successfully with airplanes. He indicated some good flying routes might be established west of Chicago or to the vicinity of the Great Lakes.

"Petersen Airlines is now operating on a paying basis, cannot be developed immediately, and Colonel Brasier, 'If you are going to rely on subsidies, then commercial aviation in this country is doing well. What is needed is a machine which can be run self-supporting. Our company has set out for new machines of a type which we know will be self-supporting. We will get the best of these in about six months.'

"Petersen Airlines will be available for the transportation of relief supplies to communities stricken by flood, famine, fire or pestilence; planes will be available for business trips, honeymoon trips and pleasure trips.

"Petersen will not be limited to a terminal, include two airports and one comfortable carry-on package, plus such as an extra compartment for luggage. The planes, eight in number, are already housed in the hangars on the field of Petersen Aviation at Bryn Athyn, Pa.

"There are indications that Roumania is the vanguard of developments in air passenger transportation. The recently formed Roumanian Air Force, under Gen. S. Z. Brasier, the Army Air Service is nonexistent. He recently announced the volume intentions in Europe for the War Department. His report pictures the Old World as remunerated with regularly established air routes, over which in 1921 20,000 passengers were transported on journeys covering points from Paris to Africa, from Free France to the Balkans, from Genoa to Venetia, and, throughout more than 6,000 sq. km. over the European continent, gathering information on the development of commercial aviation in Europe."

Cleveland News

By C. Collett

Under the auspices of the Cleveland Chapter of the N.A.A. an Automobile Exhibit is being arranged to give a high tone to the Cleveland Automobile Show, Jan. 17 to 26 of this year. The Automobile Industry will cooperate by displaying motor cars, trucks, tractors, farm implements, and all other auto and motor-cycle-engine manufacturers will be exhibited.

The Auto Club, the Baudry Co., the Glenn L. Martin Co., Loew-McNelly Co. and Floyd J. Legus are contributing exhibits of interest.

The exhibit is under the personal direction of Upton Downs the well known commercial pilot.

First Lord, Frank R. Tyndall of the 8th Parent Squadron, Hawaii, was a visitor at the Glenn L. Martin Plant during an aerial inspection trip to familiarize himself with progress in aircraft manufacturing and tested and examined various models.

From Washington, Lord Tyndall flew to Langley Field, Middlesex, Pa., Greater City, Boston, Haverhill, Lakewood, Philadelphia, Absecon, Md., Maumelle, Dayton, Detroit, Evans, Eau Claire, Beloit, Kansas City, Mattoon, Ohio, Dallas, San Antonio, St. Louis and Cleveland, and returned to Washington.

Col. Frank Starts Aviation

Col. Frank Steele, managing director of Imperial Airways, Ltd., arrived in New York last week from London. His trip was intended to study the market and to develop the possibilities for the establishment of new commercial aviation projects in this country.

When asked whether he expected to give attention to the possibilities of commercial flying in Canada, Colonel Steele said he believed the prospects were bright in this country, although the network of roads in the far north areas in the northern sections of the country make it impractical to employ successfully with airplanes. He indicated some good flying routes might be established west of Chicago or to the vicinity of the Great Lakes.

"Our first venture will be on a paying basis, cannot be developed immediately, and Colonel Brasier, 'If you are going to rely on subsidies, then commercial aviation in this country is doing well. What is needed is a machine which can be run self-supporting. Our company has set out for new machines of a type which we know will be self-supporting. We will get the best of these in about six months.'

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"The planes we are running between London and Paris are now for sixteen passengers, and the planes soon will be sixteen, the number of passengers. We are now making arrangements to establish a service between London and Canada, which will take six days in the delivery of mail. The mail will be conveyed to us by the regular mail and steamship lines. The savings we could make is that first leg of the trip to Canada, from London to Quebec, we averaged 150,000 lbs. per month last year. Our company has services from London to Berlin, London to Ghent, London to Brussels and Cologne, London, Paris and Berlin.

"The planes we are running between London and Paris are now for sixteen passengers, and the planes soon will be sixteen, the number of passengers. We are now making arrangements to establish a service between London and India, which will take six days in the delivery of mail. The mail will be conveyed to us by the regular mail and steamship lines. The savings we could make is that first leg of the trip to India, from London to Madras, we averaged 150,000 lbs. per month last year. Our company has services from London to Madras, London to Colombo, London to Bombay and Calcutta, London, Paris and Berlin.

"About sixty-five tons of first class mail go out to India every a week, or enough to load half a dozen airplanes six days a week, so that we have the volume of business and a real opportunity to do a great deal of business with India flying. This is the important point to be considered in flying projects. How many passengers or how much mail or light freight is to be carried and how much can be charged. A little flying will show whether the project is worth while or not."

UNITED STATES AIR FORCES

U.S. ARMY AIR SERVICE

Wilbur Wright Field News

Lt Col E. Riddle, who was connected with Wilbur Wright Field and with the Depot Depot at Indianapolis, Ind., before it was connected with Wilbur Wright Field, left on Nov. 14 for his new station at Middlebury, Vt. Lt Col. Riddle has served as Chief Inspector of aircraft of the 1st and 2nd Air Service Groups at Indianapolis. Lieutenant Riddle's place as Chief Inspector has been taken by Lt Col E. Hartson, who in turn has been succeeded by Lt Col Carl F. Glaser as Station Supply Officer.

Lt Col C. E. Thomas, Jr., is now in charge of the Material Service Department at Wilbur Wright Field. Lt Col C. E. Thomas, Jr. V.P. for the Pacific Coast. Lieutenant Thomas' place as Depot Supply Officer has been taken by Lt Col G. F. Freeney.

On Nov. 16, Lt Col C. E. Thomas, Jr., flew to Columbus, returning later on the day.

Lt Col G. F. Freeney, who is on Nov. 16 for the Butting Field, en route to Fort Bragg, N. C.

Lt Col H. H. Miles and Lt G. F. Ferguson proceeded by air to Chicago several days ago on a cross country trip and were held up by storms and snow at their destination. They reported to the War Dept. on Nov. 18.

Lt Col G. F. Parker, of Wilbur Field, made a short visit to Wilbur Wright Field returning by air on Nov. 18.

Maj A. W. Hobson was appointed Commanding Officer of the Area purchased by the citizens of Dayton and donated to the United States to be used as the site of the future McCook Field. It adjoins the present site of Wilbur Wright Field and for that reason Major Hobson was placed in charge.

Chautauqua Field News

Five students (three from Wilbur Field, one from Tullahoma Field and one from Langley Field) arrived by air to enter the Air Service Technical School during the preceding week.

During a recent week end excursion trip to the points designated by the War Department, Lt Col G. F. Parker, of the Air Service Technical School, 2nd Lt Col. John H. Weidert with Corporal Koenig, in a JN-4H, to Johnson Field, Indianapolis, Ind., and return; 2nd Lt Col. Robert E. Williams with Lt Col John G. Belmonte, in a JN-4H, to South Field, Ill., and return; and Lt Col Joseph H. Hart, with 2nd Lt Col. John W. Warren to the Air Service Technical School, 2nd Lt Col. W. T. Wood with Private Robbins, in a DH-4B, to Clinton, Iowa, and return; 1st Lt Col. Charles Butler, with Sergeant Lippoldenbach, in a DH-4, to Minneapolis, Minn., and return; 2nd Lt Col. Herbert K. Bunting, with 2nd Lt Col. Oberleit, Major A. S. O. R.C., in a DH-4B, to Mt. Clemens, Mich., and return.

Transporting Supplies Via Airplane

During the months of September, October and November, shipments made by air from the A. R. Supply Depot at Middlebury, Pa., amounted to 2,579 lbs. These shipments consisted of airplane spare parts and clothing and were consigned to various Air Service stations throughout which there were no depots, such as Elkhart and Martin Brothers.

These supplies are, of course, only a fraction of the amount transported from this Depot. It should be stated also that no planes are sent to Middlebury for the express purpose of securing supplies, but whenever a pilot makes a cross country trip he flight and stops at Middlebury as a result of this, he is entitled to the services of the Air Service station which he is bound to and there is room on the airplane, the pilot assumes the role of a freight carrier and reserves a shipping ticket, which he has received at departure and retains to the Depot.

Lake Field (P. L.) News

First Lt Col. Ray A. Davis, who has functioned as post and group adjutant and commanding officer of Group Headquarters Detachment, was transferred from his post at HQ to assume the duties of post quartermaster, vice Capt. Altondale. C. Dept., Q.M.C., who returns to the Mackinac on the next transport, received extensive tour of former service.

Proceedings at Lake Field, where Lt Col. Richard H. Macmillan has been post as Personnel Assistant, to that of Post and Group Adjutant, and C. O. of Group H. Q. Det.

Scott Field News

Maj. Frank M. Kennedy was the newest grant of friends at Scott Field, Illinois. He accepted the position of honor at a civic reception given by the Belleville Chamber of Commerce and the Rotary Club on Nov. 24. Major Kennedy also lectured to the Air Service Baldwin and Airship School during his stay at Scott Field.

Lt Col John A. Pfeiffer, A.M., was the guest of honor at a luncheon given by the St. Louis Chamber of Commerce on Dec. 1.

Col. Graham Assumes Command of Rockwell Depot

Lt Col. Billie Gribble, A. S. took over the command of the Rockwell Air Intermediate Depot on Thanksgiving Day, replacing Maj. H. C. Smith, who was promoted to Inspector of the Depots since the departure of Maj. H. H. Arnold. Maj. Fingerling, upon being relieved of his duties at Rockwell, returned to his former station at San Antonio, Tex., by air, picking a newly established Dilettante.

Camp Nichols (P. L.) News

From Lt Col John G. Harper prepares to take a long trip to the Air Service Technical School during the preceding week. During a recent week end excursion trip to the points designated by the War Department, Lt Col G. F. Parker, of the Air Service Technical School, 2nd Lt Col. John H. Weidert with Corporal Koenig, in a JN-4H, to Johnson Field, Indianapolis, Ind., and return; 2nd Lt Col. Robert E. Williams with Lt Col John G. Belmonte, in a JN-4H, to South Field, Ill., and return; and Lt Col Joseph H. Hart, with 2nd Lt Col. John W. Warren to the Air Service Technical School, 2nd Lt Col. W. T. Wood with Private Robbins, in a DH-4B, to Clinton, Iowa, and return; 1st Lt Col. Charles Butler, with Sergeant Lippoldenbach, in a DH-4, to Minneapolis, Minn., and return; 2nd Lt Col. Herbert K. Bunting, with 2nd Lt Col. Oberleit, Major A. S. O. R.C., in a DH-4B, to Mt. Clemens, Mich., and return.

Col. Graham has been making preparations to November to look over a landing field at Wachowice, Leyte.



Air Marshal Sir John Salmond, who has been appointed to the command of the Air Defense of Great Britain

January 18, 1925

AVIATION

20th Bombardment Squadron

Lieutenant Rodgers flew a Martin bomber for 8 hr. to 30 minutes at an altitude of 5000 ft. for the purpose of testing Fort Monroe's A.A. Batteries in testing out a new sound detector mechanism.

Air Service Technical School

The Air Service Technical School has seven DH-4s, eight G-5s, three MB-2s and one Santa Barbara in commission. These airplanes are flown every day by student officers.

U. S. NAVAL AVIATION

Los Angeles in New Test

The visiting Los Angeles made another successful flight on Jan. 10 to continue tests of the water recovery system installed since her arrival here down California.

For three hours the seaplane sailed over the shore towns from Bergenz to Anthony Park. When she reached the latter again and reached the air field she experienced difficulty in landing due to the fact that the ground was covered by a thick layer of ice. The reason for this difficulty, officers explained later, was that the 1,000 ft. up was fourteen degrees warmer than the ground temperature.

Conrad J. H. Blits, Jr., who was in command during the night, said that the water-recovery system worked well.

Extensive Airship Operations Planned

Extensive airship operations will be undertaken with the Navy's two new seaplanes, the Shenandoah and the Los Angeles, together with the airship tender Patoka, during the next six months of the year.

The purpose of these operations, as far as the Shenandoah is concerned, will be to test her usefulness as a Naval airship, and to train the personnel in operation of the airship, both from the surface and from the airship. The value of the Patoka, the airship tender equipped with a seaplane deck, as a means of providing a mobile air-sea search base will be fully determined.

The Los Angeles, designed as a commercial air liner, will be operated by the Navy as a distance and speed record holder, and as a means of showing to the American people the value of the rigid dirigible as a commercial carrier and demonstrating the reliability of her service.

The Los Angeles is scheduled to make round trips with the Patoka in Chesapeake Bay during the first three weeks of this month, together with reconnoitering and training flights. The first of these flights will be to the West Indies, the last part of both dirigibles. On Jan. 25 a total refit of the sun will take place, probably on the Atlantic Coast. In order to obtain photographs of the rare auroral phenomena at the most advantageously positioned, the visiting Los Angeles will make a flight during the night, surveying auroras, regions of intense light and other atmospheric conditions, up to 5,000 ft. altitude. To make possible the taking of observations and photographs above the clouds, the instrumentarium of the observation platform will be continued with the Los Angeles until Feb. 10, when the airship will undergo a five day's minor overhaul.

Due to a shortage in helium, the Shenandoah will not be inflated until the later part of February. By this time it is expected that Lt Col. William F. Driggs, of the 1st Observation Group, will have delivered enough helium for both airships. The shortage was caused by a slowing up of production at Fort Worth, due to cold weather. Considering the first part of March, the Shenandoah will engage in a series of test flights, preparatory to operating with the rest of the Fleet. The second part of the month will be spent in the Pacific Ocean, flying from Lahaina to the Philippines. General airship tender Patoka will proceed to the Pacific Ocean.

About Feb. 16, after the major overhaul period of five days, the Los Angeles will commence a series of long distance flights from Lahaina. Bernoulli will be visited by the seaplane during the period Feb. 16 to 26, followed by a

visit to San Juan, Puerto Rico, during the period March 2 to 27. While the remainder of the month, the Los Angeles will explore the variety of Lahaina, followed April 8 to May 29 by flights from Lahaina to the Panama Canal. The Patoka will be present at Bernoulli, San Juan and the Canal Zone.

From May 29 to June 30 there is scheduled an overhead patrol of both airships, to be followed by a flight by the Los Angeles to Honolulu, to be completed April 1 to June 29. A trans-Atlantic flight is planned for the summer to the Azores, and the Los Angeles will be used in a demonstration of the practicability of airship mail service across the Atlantic has been considered, and it is planned that a flight of this nature will be made in the fall. Flight to Siberia, the experience gained there shows that this can be done without difficulty.

While the Los Angeles is engaged in her long distance flights, either to Hawaii or England, the Shenandoah will continue her operations from Lahaina, including operations with the Patria in Chesapeake Bay, which will be continued until the end of June. During the last ten days of June the Los Angeles will undergo a thorough overhaul.

Naval Air Orders

Lt Col Harvey B. Brown, det. Aircraft Repair, Boston, Fla., to U. S. Navy.

Lt (jg) Donald J. McNally, det. U.S. Milwaukee; to Aircraft Repair, Supt. Sqd. 4th, inclosing Flying Wing.

Lt Cmdr. John H. Arnold (R.C.), det. Naval Air Station, Hangar No. 2, to Asiatic Station.

Ensign James J. Gleeson, det. See Ship, San Fran, Cal., to U. S. Langley.

Lt Cmdr. Paul Gosselin, det. Bd. of Engr., Navy Dept., in executive officer, Nasus Air Sta., N. G.H., Hampton Bds., Va.

Lt Cmdr. John C. Cunningham, det. Naval Observatory, Washington, D. C., executive officer, U.S. Milwaukee.

Lt (jg) Earl H. Bellinger, Lt, U.S. Detachment, to Aircraft Sqd. Sqd. Sqd. Flying Wing.

Lt (jg) Edward A. Meloy, det. Aircraft Sqd. Sqd. Sqd. Flying Wing, accepted 23 Jan. 1925.

Lt Col Robert H. Endresdorff, (R.C.), det. Naval Academy, Annapolis, Md., to U. S. Milwaukee.

Lt Col Harry Fisher (R.C.), det. U.S. Patoka; to See Ship, Phila, Pa.

Lt Col James P. Ryden, det. commandant U.S. R.E.T., to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) John P. Heath, det. U.S. Navy, New York, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) John G. Jones, det. U.S. Aviation, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) Michael H. Kornweil, det. Riggedown Arsenal, Edgewood, Md., to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) John H. Mathews, det. U.S. Cruiser Aviation, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) George W. Merle, det. U.S. Transport, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) Timothy J. O'Brien, det. U.S. Arkansas, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt. William F. David, det. U.S. Texas, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) Howard H. Ellington, det. U.S. Maryland, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) Robert F. Keay, det. U.S. Company, to temp. duty under water in aviation, Naval Air Station, Pensacola, Fla.

Lt (jg) Alex H. Neek, det. U.S. Patoka, to temp. duty under water in aviation, Naval Air Sta., Pensacola, Fla.

Lt (jg) Adolph D. Nelson, det. U.S. Navy, to temp. duty under water in aviation, Naval Air Sta., Pensacola, Fla.



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